## CLAIMS

What is Claimed is:

Claim 1. A vacuum pickup device for handling semiconductor wafers and interleaf separators comprising

1) a generally flat paddle member having a pickup surface and a planar top surface,

2) means for drawing air through an orifice in the paddle which creates a first vacuum of a predetermined magnitude on the pickup surface and directing the air over the top surface thereby creating an additional second vacuum at the periphery of the paddle to provide an additional lifting force gently supporting the wafer on the pickup surface whereby a low vacuum is distributed over a wide area to provide a good uniform gentle more even lifting force.

Claim 2. A vacuum pickup device as claimed in Claim 1 wherein the pickup surface includes a pattern of grooves defining vacuum channels in the pickup face of the paddle.

Claim 3. A vacuum pickup device as claimed in Claim 1 including a U-shaped vacuum channel formed in the pickup face adjacent the outer periphery thereof having open ends to admitting ambient air when the impeller is deactivated to release a wafer or interleaf.

Claim 4. A vacuum pickup device as claimed in Claim 1 including a housing for a motor to selectively activate an impeller disposed in a compartment of the housing, said housing having at least a portion spaced upwardly from the top face of the paddle so that air drawn through the orifice in the paddle is directed through the gap to discharge over the top surface of the paddle creating the second vacuum at the periphery of the paddle.

Claim 5. A vacuum pickup device as claimed in Claim 5 wherein the compartment for the

impeller has a downwardly and outwardly flared peripheral side wall which directs flow of incoming air through the gap and over the top face of the paddle.

Claim 6. A method of handling wafer and interleafs with a tool having a pickup surface and a top surface consisting of the steps of:

1) creating a low vacuum on the pick up surface of the tool producing a first force for lifting a wafer;

2) simultaneously creating air flow over the top surface producing a second lifting force in the region periphery of the top surface.